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**From:** Liang, Yan Ling [Liang.YanLing@epa.gov]  
**Sent:** 2/18/2021 7:23:00 PM  
**To:** Qian, Yaorong [qian.yaorong@epa.gov]; Nguyen, Thuy [Nguyen.Thuy@epa.gov]; Golden, Paul [Golden.Paul@epa.gov]; French, David [French.David@epa.gov]  
**Subject:** RE: Latest PFAS spreadsheets from QAO

After looking at the lab notebook, it looks like the products were not measured in duplicate during the first testing, they were just injected in duplicate during the run.

Thanks  
Yan

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**From:** Qian, Yaorong <qian.yaorong@epa.gov>  
**Sent:** Thursday, February 18, 2021 10:23 AM  
**To:** Nguyen, Thuy <Nguyen.Thuy@epa.gov>; Liang, Yan Ling <Liang.YanLing@epa.gov>; Golden, Paul <Golden.Paul@epa.gov>; French, David <French.David@epa.gov>  
**Subject:** RE: Latest PFAS spreadsheets from QAO

See the responses in red below.

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**From:** Nguyen, Thuy <Nguyen.Thuy@epa.gov>  
**Sent:** Thursday, February 18, 2021 10:04 AM  
**To:** Liang, Yan Ling <Liang.YanLing@epa.gov>; Golden, Paul <Golden.Paul@epa.gov>; Qian, Yaorong <qian.yaorong@epa.gov>; French, David <French.David@epa.gov>  
**Subject:** RE: Latest PFAS spreadsheets from QAO

Yan/Yaorong

Here are what I've listed in the report as samples received- Is that correct?

If yes, can you fill in below how many samples were actually tested? Did we do duplicate analysis on each sample or duplicate injection? What do the averages listed in the most recent spreadsheet represent? - average of all analysis for a type of sample, including duplicate injections? If the %RSD are so wide, does it justify averaging the values? I don't remember they were that wide before you re-generated the data.

If we need a meeting to talk this through, please set up one.

Thanks  
Thuy

1. HDPE Containers

- Two (2) Level 3 fluorinated 2.5-gallon jugs that previously contained the product (used) Tested one container.
- One (1) Level 3 fluorinated 2.5-gallon jug that never had the product in it (unused). Received 2, tested 2 containers.
- Two (2) unused Level 3 fluorinated HDPE 55-gallon drum Tested 2
- Two (2) unused Level 3 fluorinated 30-gallon drum. Tested 2
- Two (2) unused non-fluorinated 2.5-gallon jugs. Tested 2

2. Insecticide product

- Two (2) samples from 2 fluorinated 2.5-gallon jugs. Tested both in duplicate
- One (1) sample directly from production before packaging. Tested twice (the first time in duplicate)
- One (1) sample from a fluorinated 30-gallon drum Tested twice (the first time in duplicate)

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**From:** Liang, Yan Ling <[Liang.YanLing@epa.gov](mailto:Liang.YanLing@epa.gov)>  
**Sent:** Wednesday, February 17, 2021 4:57 PM  
**To:** Nguyen, Thuy <[Nguyen.Thuy@epa.gov](mailto:Nguyen.Thuy@epa.gov)>; Golden, Paul <[Golden.Paul@epa.gov](mailto:Golden.Paul@epa.gov)>; Qian, Yaorong <[qian.yaorong@epa.gov](mailto:qian.yaorong@epa.gov)>; French, David <[French.David@epa.gov](mailto:French.David@epa.gov)>  
**Subject:** RE: Latest PFAS spreadsheets from QAO

I've added %RSD values and calculations to both excel files.

Paul, please work off of these files tomorrow.

Thanks  
Yan

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**From:** Liang, Yan Ling  
**Sent:** Wednesday, February 17, 2021 4:00 PM  
**To:** Nguyen, Thuy <[Nguyen.Thuy@epa.gov](mailto:Nguyen.Thuy@epa.gov)>; Golden, Paul <[Golden.Paul@epa.gov](mailto:Golden.Paul@epa.gov)>; Qian, Yaorong <[qian.yaorong@epa.gov](mailto:qian.yaorong@epa.gov)>; French, David <[French.David@epa.gov](mailto:French.David@epa.gov)>  
**Subject:** RE: Latest PFAS spreadsheets from QAO

Ok I will calculate those in the latest spreadsheets. Do you also want them added to the summary sheet Thuy?

Paul, please disregard the spreadsheets I sent you at 3:11pm, I will send you new ones with RSD values included.

Thanks  
Yan

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**From:** Nguyen, Thuy <[Nguyen.Thuy@epa.gov](mailto:Nguyen.Thuy@epa.gov)>  
**Sent:** Wednesday, February 17, 2021 3:46 PM  
**To:** Liang, Yan Ling <[Liang.YanLing@epa.gov](mailto:Liang.YanLing@epa.gov)>; Golden, Paul <[Golden.Paul@epa.gov](mailto:Golden.Paul@epa.gov)>; Qian, Yaorong <[qian.yaorong@epa.gov](mailto:qian.yaorong@epa.gov)>; French, David <[French.David@epa.gov](mailto:French.David@epa.gov)>  
**Subject:** RE: Latest PFAS spreadsheets from QAO

I calculate the %RSD based previous spreadsheet. We need to revise that now that we have new numbers, When you average the numbers for reported, please calculate %RPD or %RSD so I can report them

Thanks  
Thuy

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**From:** Liang, Yan Ling <[Liang.YanLing@epa.gov](mailto:Liang.YanLing@epa.gov)>  
**Sent:** Wednesday, February 17, 2021 3:33 PM  
**To:** Golden, Paul <[Golden.Paul@epa.gov](mailto:Golden.Paul@epa.gov)>; Qian, Yaorong <[qian.yaorong@epa.gov](mailto:qian.yaorong@epa.gov)>; Nguyen, Thuy <[Nguyen.Thuy@epa.gov](mailto:Nguyen.Thuy@epa.gov)>; French, David <[French.David@epa.gov](mailto:French.David@epa.gov)>  
**Subject:** RE: Latest PFAS spreadsheets from QAO

I agree with Paul's comment on the standard deviations, I did not calculate those and we only did dups in the 12/30 data with N=2.

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**From:** Golden, Paul <[Golden.Paul@epa.gov](mailto:Golden.Paul@epa.gov)>  
**Sent:** Wednesday, February 17, 2021 2:50 PM  
**To:** Qian, Yaorong <[qian.yaorong@epa.gov](mailto:qian.yaorong@epa.gov)>; Nguyen, Thuy <[Nguyen.Thuy@epa.gov](mailto:Nguyen.Thuy@epa.gov)>; Liang, Yan Ling

<Liang.YanLing@epa.gov>; French, David <French.David@epa.gov>

**Subject:** RE: Latest PFAS spreadsheets from QAO

I am OK with that notation.

Paul

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**From:** Qian, Yaorong <qian.yaorong@epa.gov>

**Sent:** Wednesday, February 17, 2021 2:48 PM

**To:** Golden, Paul <Golden.Paul@epa.gov>; Nguyen, Thuy <Nguyen.Thuy@epa.gov>; Liang, Yan Ling <Liang.YanLing@epa.gov>; French, David <French.David@epa.gov>

**Subject:** RE: Latest PFAS spreadsheets from QAO

For the limitations of the results, how about the following:

All results of the rinsates (reported as ppb, or ng/ml of rinsate) are estimate using the attached method, due to the fact that the values would change depending on the type and the amount of the rinsing solvent, size of containers, rinsing time and temperature, etc.

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**From:** Golden, Paul <Golden.Paul@epa.gov>

**Sent:** Wednesday, February 17, 2021 2:24 PM

**To:** Nguyen, Thuy <Nguyen.Thuy@epa.gov>; Liang, Yan Ling <Liang.YanLing@epa.gov>; French, David <French.David@epa.gov>

**Cc:** Qian, Yaorong <qian.yaorong@epa.gov>

**Subject:** RE: Latest PFAS spreadsheets from QAO

Thuy,

Here are some of my thoughts to consider in yellow (with the exception of the footnote in yellow on page 2, not sure how/why that's there).

I expect there will also be other flags on the final spreadsheet(s) to be attached.

Obviously we will also need to remove (or edit) any preliminary results verbiage in the final report.

Paul

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**From:** Nguyen, Thuy <Nguyen.Thuy@epa.gov>

**Sent:** Wednesday, February 17, 2021 11:24 AM

**To:** Golden, Paul <Golden.Paul@epa.gov>; Liang, Yan Ling <Liang.YanLing@epa.gov>; French, David <French.David@epa.gov>

**Cc:** Qian, Yaorong <qian.yaorong@epa.gov>

**Subject:** RE: Latest PFAS spreadsheets from QAO

Paul

Can you send me the report with your comments?

Thanks

Thuy

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**From:** Golden, Paul <[Golden.Paul@epa.gov](mailto:Golden.Paul@epa.gov)>  
**Sent:** Wednesday, February 17, 2021 11:08 AM  
**To:** Liang, Yan Ling <[Liang.YanLing@epa.gov](mailto:Liang.YanLing@epa.gov)>; French, David <[French.David@epa.gov](mailto:French.David@epa.gov)>  
**Cc:** Qian, Yaorong <[qian.yaorong@epa.gov](mailto:qian.yaorong@epa.gov)>; Nguyen, Thuy <[Nguyen.Thuy@epa.gov](mailto:Nguyen.Thuy@epa.gov)>  
**Subject:** Latest PFAS spreadsheets from QAO

On the checks and recoveries spreadsheet I have placed flags for CCV and outside calibration range issues.

On the report I have placed some additional comments to consider adding.

Yan, you may need to get the thumb drive to get/find the latest Sciex instrument reports to verify proper integration of the CCV data. I suspect you guys have already looked hard at the Cal Curve data, and the reportable data integrations.

Paul